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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,917	09/21/2007	Trevor Solomon	13877/10401	1650

26646 7590 03/22/2011

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EXAMINER	
WESTERBERG, NISSA M	
ART UNIT	PAPER NUMBER
1618	
MAIL DATE	DELIVERY MODE
03/22/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/585,917	SOLOMON ET AL.	
	Examiner	Art Unit	
	NISSA WESTERBERG	1618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 February 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-9 and 11-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-9 and 11-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicants' arguments, filed February 16, 2011, have been fully considered but they are not deemed to be fully persuasive. The following rejections and/or objections constitute the complete set presently being applied to the instant application.

Comments and Notes

2. New claim 16 refers to an organic monobasic carboxylic acid having certain physical properties and also recites a formula for this residue - OC(=O)R'. This limitation is quite similar, with the exception of the chemical formula, to original claim 8. Claim 16 uses R', a variable which was not present in the specification as originally filed and which is not explicitly defined in the claim. While the words that follow the formula limit the scope of this claim to those organic monobasic carboxylic acid residues that were encompassed by the limitation of original claim 8 and thus the formula does not add new matter as it merely chemical represents what the words alone previously defined, it is respectfully suggested that the chemical formula be removed claim 18 and the language amended to more closely match original claim 8.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 3 – 5, 8, 9 and 11 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (US 5,880,173). This rejection is MAINTAINED for the reasons of record set forth in the Office Action mailed November 16, 2011 and those set forth below.

Applicant traverses this rejection on the grounds that Matsuda does not suggest metallic copper content of less than 2% by weight. Matsuda explicitly discloses the use of cuprous oxide, copper stearate, copper naphthenate or copper dialkylthiocarbamates as antifouling agents, and only one of these now recited in the claimed invention. The Examiner has incorrectly extrapolated that the cuprous oxide of Matsuda or Hani would have 0% elemental copper as this level of purity is not a feature of any commercial source of cuprous oxide known to the Applicants. More than 2% metallic copper in the biocide does not provide for good long-term storage stability in the liquid state. Selection of cuprous oxide is based on particle size and not metallic copper content, as evidenced by the provided Pigments Handbook chapter discussing cuprous oxide. Manufacturing routes than produce less metallic copper impurities result in higher levels of other impurities, such as chlorides or sulphates.

These arguments are unpersuasive. That Matsuda only teaches one of the now claimed copper-based biocides is sufficient to render the claims obvious as cuprous oxide as the copper based biocide is a limitation of all the rejected claims. While particle size affects the color possibilities of the antifouling compositions and is clearly one results effective parameter, other results effects parameters can also be considered by the person of ordinary skill in the art. Applicants present no evidence as to the

elemental copper content of commercially available copper oxides. Arguments without factual support are mere allegations and are not found persuasive. It is also noted that the claims only place limitations on the elemental copper content and not the levels of other impurities which are indicated by applicant to be elevated in cuprous oxide compositions with decreased elemental copper content. Thus, selection of cuprous oxide having low elemental copper levels with higher levels of other impurities for use in the compositions of Matsuda would still meet the limitations of the instant claims. In regards to applicants' allegation of the criticality of the metallic copper concentration, the evidence present in the specification is insufficient to establish the criticality of this range and is not commensurate in scope with the instant claims. The only evidence of the improved stability utilizes one particular polymer A at a concentration of 13.8% with copper as the metal and a single acid number, no polymer B and 40.7 % cuprous oxide with either 2.7% or 0.6% metallic copper (coating compositions A and B, p 19 – 20 of the instant specification). All of the claims are much broader than this single example, reciting a Markush structure for polymer A with varying acid numbers with either copper, zinc or tellurium as the metal, the optional inclusion of polymer B and three other copper based biocides beside cuprous oxide that may be present in the composition.

In regards to new claim 16, this is a new independent claim that incorporates the limitation of claim 8 into claim 1 and requiring the copper-base biocide to be cuprous oxide. As mentioned above, cuprous oxide is taught by Matsuda. The limitations of claims 17 and 18 are met because these formulations contain 0% polymer (B).

7. Claims 1, 3 – 9 and 11 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. and further in view of Hani et al. (US 5,185,033). This rejection is MAINTAINED for the reasons of record set forth in the Office Action mailed November 16, 2010 and those set forth below.

Applicant has not specifically addressed this rejection other than referring to Hani, so the rejection is maintained for the reasons set forth above with regard to Matsuda above.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NISSA WESTERBERG whose telephone number is (571)270-3532. The examiner can normally be reached on M - F, 8:00 a.m. - 4 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Hartley can be reached on (571) 272-0616. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MICHAEL G. HARTLEY/
Supervisory Patent Examiner, Art Unit 1618

NMW